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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/484,259 01/18/00 COATES

D MERCK1883-C1

EXAMINER

023599 MM91/0808  
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ART UNIT

PAPER NUMBER

2871  
DATE MAILED:

08/08/01

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

**Office Action Summary**

Application No.

09/484,259

Applicant(s)

COATES ET AL.

Examiner

Tarifur R Chowdhury

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 9-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 9-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. § 119**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

**Attachment(s)**

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Prosecution Application*

1. The request filed on 05/02/2001 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 09/484,259 is acceptable and a CPA has been established. An action on the CPA follows.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1 and 11-19 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Krueger et al. (Krueger), USPAT 4,112,157.**

5. Krueger discloses an aluminum oxide layer for homeotropic alignment of liquid crystal.

Alternatively, it would have been obvious to use  $\text{Al}_2\text{O}_3$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

Transparent and opaque aluminum oxide layers are well known in the liquid crystal display arts, and, to optimize device performance, would have been obvious to use.

**6. Claims 1 and 9-19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Scherer et al. (Scherer), USPAT 5,880,801.**

7. Scherer discloses an aluminum oxide layer for homeotropic alignment of liquid crystal.

Alternatively, it would have been obvious to use  $\text{Al}_2\text{O}_3$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

Transparent and opaque aluminum oxide layers are well known in the liquid crystal display arts, and, to optimize device performance, would have been obvious to use.

**8. Claims 1, 3, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato et al. (Kato), USPAT 5,745,205.**

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9. Kato discloses a liquid crystal film or layer with homeotropic alignment characterized in that the homeotropic alignment is achieved by an alignment layer on a substrate.

Kato does not explicitly disclose that alignment layer is an aluminum coating or a smooth layer of layer. However, it would have been obvious to use  $\text{Al}_2\text{O}_3$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

As to claim 3, using plastic sheets and films as substrates are well known in the liquid crystal display art for several advantages such as to reduce breakage. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use plastic sheets or films as substrates in the device of Kato in order to reduce breakage.

**10. Claims 1, 3, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (Ma), USPAT 5,056,898.**

11. Ma discloses a liquid crystal film or layer with homeotropic alignment characterized in that the homeotropic alignment is achieved by an alignment layer on a substrate.

Ma does not explicitly disclose that alignment layer is an aluminum coating or a smooth layer of layer. However, it would have been obvious to use  $\text{Al}_2\text{O}_3$  as the orientation layer material since this material is commonly used as the aluminum oxide material in liquid crystal display devices.

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As to claim 3, using plastic sheets and films as substrates are well known in the liquid crystal display art for several advantages such as to reduce breakage. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use plastic sheets or films as substrates in the device of Ma in order to reduce breakage.

**12. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato or Ma as applied to claims 1, 3, 9 and 10 above and in view of Ohnishi et al. (Ohnishi), USPAT 5,601,884.**

13. Kato and Ma disclose a liquid crystal film or layer with homeotropic alignment, but do not disclose that the substrate is a polymeric material nor that the substrate prior to coating with the alignment layer or its precursor is subjected to a corona discharge.

Ohnishi discloses substrates of polymeric material (col. 14, lines 41-48).

Therefore, it would have been obvious to use a polymer substrate, as taught by Ohnishi, in the device of either Kato or Ma to reduce breakage.

Ohnishi discloses "in case a polymer film is used as substrate, the polymer film or surface of the surface-treated polymer film may be further subjected to a treatment for increasing uniform film thickness of the film by a known surface reforming technique such as ... corona discharge" (col. 17, lines 16-23).

Therefore, it would have been obvious to use corona discharge, as taught by Ohnishi, the device of either Kato or Ma.

***Response to Arguments***

14. Applicant's arguments filed on November 9, 2000 have been fully considered but they are not persuasive.

In response to applicant's argument that reference Scherer disclose the use of anodized aluminum as an orientation layer which has an outer surface that is not smooth, it is respectfully pointed out to applicant that the claim recites that the alignment layer can be *either* an aluminum coating *or* a smooth  $\text{Al}_2\text{O}_3$  layer (*emphasis added*) and since Scherer discloses that the alignment layer is an aluminum coating, the rejection was proper and thus maintained.

Further, as to the reference Krueger, used to reject claims 1 and 11-19, Applicant has not argued or in any way attempted to show there is any error in this position taken by the Examiner, and it is therefore considered that the Applicant has acquiesced.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tarifur R Chowdhury whose telephone number is (703) 308-4115. The examiner can normally be reached on M-Th (6:30-5:00) Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on (703) 305-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

TRC  
August 6, 2001

A handwritten signature in black ink, appearing to read "William L. Sikes".

**William L. Sikes**  
**Supervisory Patent Examiner**  
**Technology Center 2800**